

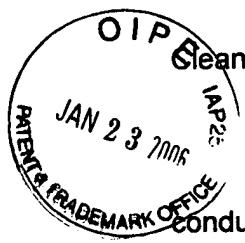


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As to surface area, there should be at least about 25,000 teeth per square inch, better still is essentially at least about 100,000 per square inch, and preferably at least about 200,000 per square inch, or even greater.



Step 3 includes applying the dielectric material 8 to the outermost surface of the conductive layer 10 (and the base 4 if appropriate for the circuitry or electrical device at issue) prepared in accordance with the step 2. The dielectric material 8 can be applied by as a (dry) film, a (liquid) curtain coating, a (liquid) roller coating, or an analogous application or bonding 5 technique. Figure 7, in comparison with Figures 3 - 6, illustrates the dielectric material 8 on the outermost surface(s) of the conductive layer 4 (and the base 2).

Step 4 includes preparing the applied dielectric material 8 for receipt of a conductive coating 10, which to exemplify, is detailed more particularly below. Generally, though, the preparing step 4 can include exposing, developing, and curing the applied dielectric 10 material 8 to form patterns for further construction of the circuitry, including such features as constructing a via or photo via 14, for optionally filling by conductive or non-conductive materials, e.g., screened, roller coated, etc. Compare Figures 6 and 7.



Step 7 includes applying a conductive coating 10 to the cavities in the applied dielectric material 8. The conductive coating 10 is also applied to the photo-defined via holes 14 and the open through holes 16. Techniques for applying the conductive coating 10 include a direct plate process or an electroless copper process. To carry out the present invention, it is preferable to use a palladium-based direct plate process or other non-electroless process.

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In this regard, a Crimson product of Shipley is suitable, though the desmear process as disclosed herein is contrary to the manufacturer's specifications, i.e., a "double desmear process," rather than the single desmear process of the known prior art. Compare Figures 1, 2, and 9.